

What Is Claimed Is:

1. A sensor element, comprising:

at least one sensing area that is at least temporarily in contact with a fluid to be tested, the sensing area detecting a measured variable characterizing at least one of a physical property and a chemical property of the fluid;

wherein at least certain portions of the sensing area include one of a metal plating and a metallic structure that is applied directly to a plastic surface.

2. The sensor element as recited in claim 1, further comprising:

a hollow member; and

a base member;

wherein the hollow member and the base member together form a housing that shields the sensing area against disturbances.

3. The sensor element as recited in claim 2, wherein the plastic surface is part of an inner surface of the hollow member, wherein the hollow member is provided with at least one inlet opening for the fluid.

4. The sensor element as recited in claim 2, wherein the base member is provided with a cover facing away from the hollow member.

5. The sensor element as recited in claim 1, wherein the applied metal plating is a structured metal layer.

6. The sensor element of claim 1, wherein the sensing area includes one of a plurality of rods, a plurality of prisms, and a plurality of hollow cylinders at least partially made of plastic and one of superficially metal plated in a form of an interdigital structure and provided with a metallic structure on selected surface areas.

7. The sensor element as recited in claim 6, wherein the sensing area includes one of a pair of rods, a pair of prisms, and a pair of hollow cylinders positioned one of in parallel and concentrically to one another to form a capacitor.

8. The sensor element as recited in claim 6, wherein the surface of at least one of a single rod, a single hollow cylinder, and a single prism includes an insulation layer on top of the one of the metal plating and the metallic structure provided on the plastic surface.

9. The sensor element as recited in claim 1, wherein the sensing area further includes a bracket at least partially made of plastic, the one of the metal plating and the metallic structure being provided on the plastic surface of the bracket.

10. The sensor element as recited in claim 1, wherein the one of the metal plating and the metallic structure is applied to the plastic surface using MID technology.

11. The sensor element as recited in claim 1, wherein at least one of a dielectric constant, an electric conductivity, a thermal conductivity, and a fill level of the fluid in a reservoir is measured by the sensing area.

12. A fluid sensor, comprising:

a first sensor element having at least one sensing area that is at least temporarily in contact with a fluid, the sensing area detecting a measured variable characterizing at least one of a physical property and a chemical property of the fluid; and

an additional sensor element having at least one sensing area for providing an additional measured variable characterizing at least one of a further physical property and a further chemical property of the fluid;

wherein at least certain portions of the sensing area of the first sensor element include one of a metal plating and a metallic structure that is applied directly to a plastic surface.

13. The fluid sensor as recited in claim 12, wherein the additional sensor element includes one of a viscosity sensor element and a temperature sensor element.

14. The fluid sensor as recited in claim 12, wherein the additional sensor element is electrically conductively connected to the one of the metal plating and the metallic structure applied to the plastic surface, and wherein the additional sensor element is at least one of electrically controllable and electrically readable from the one of the metal plating and the metallic structure.

15. The fluid sensor as recited in claim 14, wherein one of the metal plating and the metallic structure is one of a conductor and an interdigital capacitor.

16. The fluid sensor as recited in claim 14, wherein the additional sensor element is connected to one of the metal plating and the metallic structure by an electrically conductive adhesive.

17. The fluid sensor as recited in claim 14, wherein the additional sensor element is connected to one of the metal plating and the metallic structure on the plastic surface using flip-chip technology.

18. The fluid sensor as recited in claim 12, wherein the additional sensor element is at least temporarily in contact with the fluid via an inlet opening.

19. The fluid sensor as recited in claim 12, wherein one of the metal plating and the metallic structure is applied to the plastic surface using MID technology.

20. The sensor element as recited in claim 2, wherein the at least one physical property is an electric property, and wherein the disturbances include at least one of mechanical effects and electromagnetic fields.